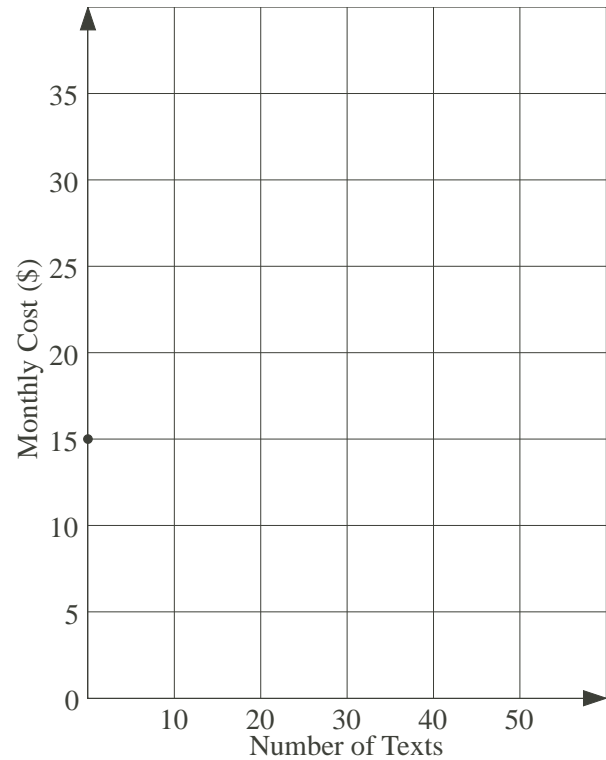


## Problem

- a) A cell phone plan costs \$15.00 per month plus 40 cents for each text. Fill in the left table below with the appropriate monthly cost for each number of texts. Plot the data from the table on the graph to display the different monthly costs.

No. of Texts	Total Monthly Cost
0	\$15
10	
20	
30	
40	
50	



- b) You have the option of getting unlimited texting for an additional \$10.00 per month. How many texts would you have to send each month to make unlimited texting a better option? Use both your table and graph to prove your answer.



**Hints**

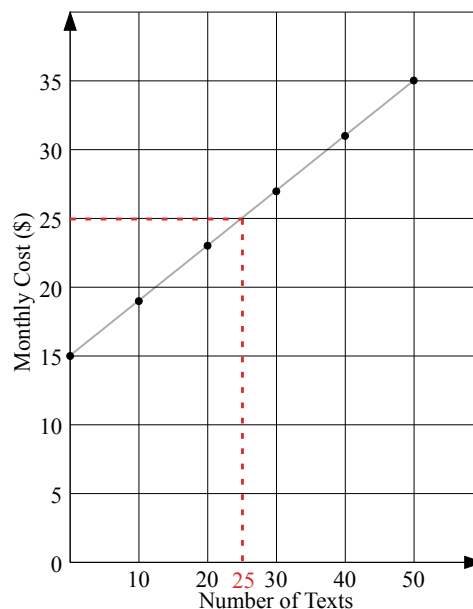
3 b)

**Hint 1** - How many texts can you send under the old plan for \$25 total cost?

## Solution

a)

No. of Texts	Total Monthly Cost
0	\$15
10	\$19
20	\$23
30	\$27
40	\$31
50	\$35



Note that the data points form a straight line, shown in grey.

- b) The cost for unlimited texting is the basic cost plus an additional \$10, i.e.,  $\$15 + \$10 = \$25$ . In the table, 20 texts cost \$23 and 30 texts cost \$27, so the “break even” point is in the middle, 25 texts costing \$25, the ‘unlimited texting’ cost. This is reflected on the graph with the dotted line at \$25 hitting the plotted line at 25 texts. For more than 25 texts, the unlimited plan is the better option.

Alternative Solution: For \$10, at 40¢ for each text, you can send  $\$10 \div \$0.40 = 25$  texts. Thus, for more than 25 texts, the unlimited plan is cheaper.